

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**LISTING OF CLAIMS:**

1. (Currently Amended) A demand-supply scheme planning apparatus comprising:

first means for storing data regarding a cost and a time that are needed between a purchase step and a supply step of each demand-supply step of a supply chain and stock amount of items required in each demand-supply step, the supply chain including a plurality of demand-supply steps each having an order receipt step, an order placement step, a purchase step, and a supply step that are related to a commodity;

second means for inputting an order receipt scheme, which includes an order quantity, of a demand-supply step of the plurality of demand-supply steps that is located at a supply-side terminal of the supply chain;

third means for determining basic scheme data regarding the order receipt step, the order placement step, the purchase step, and the supply step of each of the plurality of demand-supply steps based on the inputted order receipt scheme and at least the stored data relating to the stock amount items required, for each demand-supply step, and distributes order quantity among the plurality of demand-supply steps based on the basic scheme data of each demand-supply step;

fourth means for calculating a profitability index of each demand-supply step of the supply chain based on the basic scheme data determined and the ~~cost and time~~ data stored by the first means;

fifth means for ~~making a change in a predetermined parameter of each demand-supply step in the third means, for varying the profitability index of each demand-supply step, adjusting the basic scheme of at least one demand-supply step by at least one of a) changing an initial distribution of the order quantity of the order receipt step, b) advancing or delaying at least a portion of an order amount of the order placement step, and c) changing a target stock amount of items allocated to the demand-supply step from the stock amount,~~ wherein the fourth means calculates a first profitability index for a first version of the supply chain ~~before~~ without making said ~~changes in the predetermined parameters~~ adjustments, and calculates a ~~second profitability index for a second~~ an additional profitability index for each adjusted version of the supply chain ~~after making said changes in the predetermined parameters;~~ and

sixth means for establishing a demand-supply scheme for manufacturing the commodity by selecting the ~~first or the second calculated~~ version of the supply chain having the highest calculated profitability index.

2. (Original) An apparatus according to claim 1, wherein the commodity includes a product and a part.

3. (Original) An apparatus according to claim 1, wherein the commodity include a service.

4. (Original) An apparatus according to claim 1, wherein the third means determines an amount of order placement of the demand-supply step, based on at least an amount of order receipt, an amount of stock, and a target amount of stock of the demand-supply step.

5. (Previously Presented) An apparatus according to claim 4, wherein a predetermined parameter to be changed includes the target amount of stock, and the fifth means is for changing the target amount of stock.

6. (Previously Presented) An apparatus according to claim 1, wherein the first means further stores data regarding an order-receivable amount of each demand-supply step, and the fifth means changes a predetermined parameter regarding order receipt within the order-receivable amount.

7. (Previously Presented) An apparatus according to claim 1, wherein the fifth means is for changing a predetermined parameter that sets a starting timing of the order placement step.

8. (Currently Amended) A program stored on a computer readable medium, for a demand-supply scheme planning method, comprising the steps of:

A) storing first data regarding a cost and a time that are needed between a purchase step and a supply step of each demand-supply step of a supply chain in which a plurality of demand-supply steps each having an order receipt step, an order placement step, a purchase step, and a supply step that are related to a commodity,

and second data regarding stock amounts of items required in each demand-supply step;

B) inputting an order receipt scheme, which includes an order quantity, of a demand-supply step of the plurality of demand-supply steps that is located at a supply-side terminal of the supply chain;

C) determining basic scheme data regarding the order receipt step, the order placement step, the purchase step, and the supply step of each of the plurality of demand-supply steps based on the inputted order receipt scheme and at least the stored data relating to the stock amount of items required, for each demand-supply step;

D) ~~calculating a profitability index of a first version of the supply chain based on the scheme data determined and the first data~~ determining a supply chain distribution scheme by distributing the order quantity among the plurality of demand-supply steps based upon the basic scheme data of each demand-supply step;

E) ~~making a change in a predetermined parameter of each demand-supply step of step C for varying the profitability index of each demand-supply step, wherein step D comprises calculating a first profitability index for a first version of the supply chain before making said changes in the predetermined parameters, and calculating a second profitability index for a second version of the supply chain after making said changes in the predetermined parameters; and~~ adjusting the basic scheme data of at least one demand-supply step by at least one of a) changing an initial distribution of the order quantity of the order receipt step, b) advancing or delaying at least a portion of an order amount of the order placement step, and c) changing a target stock amount of items allocated to the demand-supply step from the stock amount;

F) ~~establishing a demand-supply scheme for manufacturing the commodity by selecting the first or the second calculated version of the supply chain having the highest profitability index~~ calculating a first profitability index for a first version of the supply chain distribution scheme in which none of the said adjustments has been made;

G) calculating an additional profitability index for each adjusted supply chain distribution scheme that has been adjusted in step E; and

H) selecting the supply chain distribution scheme having the highest calculated profitability index as the supply chain distribution scheme to be used in manufacturing the commodity.

9. (Previously Presented) A program according to claim 8, wherein the commodity includes a product and a part.

10. (Previously Presented) A program according to claim 8, wherein the commodity include a service.

11. (Previously Presented) A program according to claim 8, further comprising determining an amount of order placement of the demand-supply step, based on at least an amount of order receipt, an amount of stock, and a target amount of stock of the demand-supply step.

12. (Previously Presented) A program according to claim 11, wherein step E comprises changing a predetermined parameter constituting the target amount of stock.

13. (Previously Presented) A program according to claim 8, further comprising:  
storing data regarding an order-receivable amount of each demand-supply step; and

wherein step E comprises changing a predetermined parameter relating to order receipt within the order-receivable amount.

14. (Previously Presented) A program according to claim 8, wherein step E comprises changing a predetermined parameter that sets a starting timing of the order placement step.

15. (Previously Presented) A computer programmed to perform the program according to claim 8.

16. (Canceled)

17. (Currently Amended) A demand-supply scheme planning apparatus comprising:

first means for storing first data regarding a cost and a time that are needed between purchase of a product or a part and shipment of the product in each demand-supply step of a supply chain ~~in which a plurality of demand-supply steps,~~ second data regarding a transportation cost involved in the shipment of the product and a time needed for transportation of the product, ~~and~~ third data regarding targets of stock of the product and the member of each demand-supply step, and fourth data

regarding stock amounts of items required in each demand-supply step, wherein the each demand-supply step places an order for a product or a member for producing the product upon receiving an order for the product, and that ships the product purchased in accordance with the order placed or that produces and ships the product using the member purchased in accordance with the order placed;

second means for inputting stock records of the product and the member of each demand-supply step of the supply chain;

third means for inputting an order receipt scheme, which includes an order quantity, of the product of a demand-supply step located at a shipment-side terminal of the supply chain;

fourth means for calculating a first profitability index for a first version of the supply chain, ~~and a second profitability index for a second version of the supply chain after making a change in each demand-supply step of the supply chain~~ based on basic scheme data regarding order receipt, order placement, purchase and shipment of each demand-supply step, and the ~~first and second~~ data stored by the first means, and an additional profitability index for at least one second version of the supply chain after adjusting the basic scheme data of at least one demand-supply step by at least one of: a) changing an initial distribution of the order quantity of the order receipt scheme, b) advancing or delaying at least a portion of an order amount of the order placed, and c) changing the target stock amount of products allocated to the demand-supply step from the stock amount; and

fifth means for establishing a demand-supply scheme by selecting the ~~first or the second calculated~~ version of the supply chain having the highest calculated profitability index.

18. (Original) An apparatus according to claim 17, wherein the fifth means determines a deviation between a value obtained by subtracting the order receipt scheme of the demand-supply step located at the shipment-side terminal from the stock record of the demand-supply step and the stock target value of the demand-supply step, as an amount of order placement, and distributing the amount of order placement as order placement to a demand-supply step where the order placement from the demand-supply step at the shipment-side terminal is possible, in such a manner that a profit increases, based on the first and the second data stored by the first means.

19. (Original) An apparatus according to claim 17, further comprising:  
sixth means for setting an order receivable range of each demand-supply step based on a fourth data regarding a product order receivable range of each demand-supply step stored in data stored by the first means; and  
seventh means for determining appropriateness of each demand-supply step based on the order receivable range set by the sixth means and the order receipt of each demand-supply step set by the fifth means.

20. (Original) An apparatus according to claim 19, wherein the seventh means determines whether a processing capability of each demand-supply step is excess or insufficient.

21. (Previously Presented) An apparatus according to claim 17, further comprising:



sixth means for setting an order receivable range of each demand-supply step based on a fourth data regarding a product order receivable range of each demand-supply step stored in data stored by the first means; and

seventh means for determining whether the order receipt of each demand-supply step used by the fifth means is within the order receivable range set for the corresponding demand-supply step by the sixth means; and

eighth means for, if the seventh means determines that the order receipt is not within the order receivable range, changing the scheme data used by the fifth means so that the order receipt of the demand-supply step subjected to the determination becomes within the corresponding order receivable range.

22. (Original) An apparatus according to claim 21, wherein the eighth means switches a portion or a whole amount of the order receipt of the demand-supply step subjected to the determination to order receipt of a demand-supply step that is capable of shipping a product identical to that shipped by the demand-supply step subjected to the determination.

23. (Previously Presented) An apparatus according to claim 21, wherein the seventh means changes, in time, at least an amount of the order receipt of the demand-supply step subjected to the determination relative to the order receipt scheme.

24. (Previously Presented) An apparatus according to claim 23, wherein the seventh means determines whether a sum of the changed order receipt and the order receipt used by the fifth means is within the order receivable range set by the

sixth means, if the eighth means accomplishes order receipt changing, in time, at least an amount of the order receipt.

25. (Original) An apparatus according to claim 21, wherein the eighth means changes at least a portion of the third data of each demand-supply step stored by the first means.

26. (Original) An apparatus according to claim 21, wherein the eighth means changes the scheme data so that the order receipt of each demand-supply step becomes within the corresponding order receivable range and so that the profitability index increase.

27. (Previously Presented) An apparatus according to claim 17, further comprising output means for outputting the scheme data used by the fifth means.

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28. (Currently Amended) A program stored on a computer readable medium, for a demand-supply scheme planning method comprising the steps of:

storing first data regarding a cost and a time that are needed between purchase of a product or a part and shipment of the product in each demand-supply step of a supply chain comprised of a plurality of demand-supply steps, second data regarding a transportation cost involved in the shipment of the product and a time needed for transportation of the product, ~~and~~ third data regarding targets of stock of the product and the member of each demand-supply step, and fourth data regarding stock amounts of items required in each demand-supply step, wherein each demand-supply step places an order for a product or a member for producing the

product upon receiving an order for the product, and that ships the product purchased in accordance with the order placed or that produces and ships the product using the member purchased in accordance with the order placed;

inputting stock records of the product and the member of each demand-supply step of the supply chain;

inputting ~~an~~ a basic scheme for the order receipt scheme of the product of a step, order placement step, purchase step and supply step of each demand-supply step located at a shipment-side terminal of the supply chain in accordance with an order quantity and at least the stored data relating to the stock amount of items required;

inputting a supply chain distribution scheme by distributing the order quantity among the plurality of demand-supply steps based on the basic scheme of each demand-supply step;

adjusting the basic scheme of at least one demand-supply step by at least one of a) changing an initial distribution of the order quantity of the order receipt step, b) advancing or delaying at least a portion of an order amount of the order placement step, and c) changing a target stock amount of items allocated to the demand-supply step from the stock amount,

calculating a first profitability index ~~of~~ for a first version of the supply chain and a second profitability index for a second version of the supply chain after making a change in each demand-supply step of the supply chain, based on scheme data regarding order receipt, order placement, purchase and shipment of each demand-supply step, and the first and second data stored by the first means; and

~~establishing a demand-supply scheme by selecting the first or the second  
calculated version of the supply chain having the highest profitability index  
distribution scheme in which none of said adjustments has been made;~~

~~calculating an additional profitability index for each supply chain distribution  
scheme that has been adjusted; and~~

~~selecting the supply chain distribution scheme having the highest calculated  
profitability index as the supply chain distribution scheme to be used in  
manufacturing the commodity.~~

Claims 29-35 (Canceled)

36. (Previously Presented) An apparatus according to claim 1, further comprising an adjustment means for adjusting a distribution of the scheme data regarding the order receipt step, the order placement step, the purchase step and the supply step for each of the plurality of demand-supply steps.

37. (Previously Presented) A program according to claim 8, wherein step F includes adjusting a distribution of the scheme data regarding the order receipt step, the order placement step, the purchase step and the supply step for each of the plurality of demand-supply steps.

38. (Previously Presented) An apparatus according to claim 17, wherein said fifth means adjusts the scheme data regarding order receipt, order placement, purchase and shipment of each demand-supply step.

39. (Previously Presented) A program according to claim 28, wherein the establishing step includes adjusting the scheme data regarding order receipt, order placement, purchase and shipment of each demand-supply step.

40. (Currently Amended) A supply chain distribution scheme planning apparatus comprising:

a data storage portion that stores parameters for a plurality of demand-supply steps in that form a supply chain, wherein each demand-supply step includes an order receipt step, an order placement step, a purchase step, and a supply step, and wherein the stored parameters include stock amounts of items required in each demand-supply step;

a data input portion for inputting an order quantity;

a supply chain distribution scheme determining portion that determines a basic scheme for the order receipt step, order placement step, purchase step and supply step of each demand-supply step in accordance with the order quantity and at least one stored parameter, and determines a supply chain distribution scheme by distributing the order quantity among the plurality of demand-supply steps~~[[,]]~~ based on the basic scheme of each demand-supply step;

an index calculating portion that calculates a profitability index of the supply chain distribution scheme based on the basic scheme determined by the supply chain distribution scheme determining portion for each demand-supply step within of the supply chain;

a basic scheme adjusting adjustment portion that ~~changes a predetermined parameter of each~~ adjusts the basic scheme of at least one demand-supply step of ~~the supply chain to change, the profitability index of the supply chain~~ by at least one

of a) changing an initial distribution of the order quantity of the order receipt step,  
b) advancing or delaying at least a portion of an order amount of the order placement  
step, and c) changing a target stock amount of items allocated to the demand-supply  
step from the stock amount, wherein the index calculating portion calculates a first  
profitability index for a first version of the supply chain ~~before making said changes in~~  
~~the predetermined parameters~~ distribution scheme in which the basic scheme  
adjustment portion has not made any adjustments, and calculates ~~a second an~~  
additional profitability index for ~~a second version of the~~ each adjusted supply chain  
~~after making said changes in the predetermined parameters~~ distribution scheme  
generated by the basic scheme adjustment portion; and

a selecting portion ~~for establish a demand-supply scheme for manufacturing~~  
~~the commodity by selecting the first or the second calculated version of the supply~~  
~~chain having the highest profitability index~~ that selects the supply chain distribution  
scheme having the highest calculated profitability index as the supply chain  
distribution scheme to be used in manufacturing a commodity.